

# Bloomberg Philanthropies Initiative for Global Road Safety (BIGRS) 2020–2025 Roadside Observational Study

Technical Appendix for Dhaka North Round  
Seven

## **Bloomberg Philanthropies Initiative for Global Road Safety (BIGRS) 2020–2025 Roadside observational study**

### **Technical appendix for Dhaka North Round Seven**

The Johns Hopkins International Injury Research Unit partnered with the Centre for Injury Prevention and Research, Bangladesh (CIPRB) to conduct roadside observations in Round seven (October - November 2024). The methods for these findings were developed by the Johns Hopkins International Injury Research Unit and implemented in collaboration with the CIPRB. This report provides results from observational surveys that represent population-level (citywide) prevalence of an important road safety risk factor, speed, in Round seven. For speed, there were approximately 67,721 observations.

Observation sites were selected to obtain a representative sample of vehicles and road users in each city, conditional on the safety of observers. There were 15 observation sites per risk factor, and a standardized protocol was used with vehicles selected for observation in a systematic quasi-random fixed sequence. Observations were performed between 06:30 a.m. and 07:00 p.m. on both weekend days and weekdays. The methods were designed to estimate citywide prevalence and cannot provide insights into interventions conducted in specific locations in the city.

This technical appendix was created on December 3, 2024 by the Johns Hopkins International Injury Research Unit using the following files:

- BIGRS3\_GAR tech appendix\_240326.do
- R7\_DhakaNorth\_BIGRS3 speed.dta

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## 1. Speeding

### Key findings

- Overall, 1% of the vehicles were traveling above the posted speed limit.
- However, after applying the global best practice nearly 24% of vehicles on collector/local roads were found to be traveling above the recommended speed limit of 30 km/h.
- Heavy vehicles were the leading types of vehicles that were exceeding the speed limit (2%), compared to light vehicles (1%) and motorcycles (0%).
- When disaggregated by vehicle type, speeding was frequent among minibuses/minivans (7%) followed by buses (2%).
- When disaggregated by vehicle ownership type, commercial vehicles were found to be speeding (2%) compared to other vehicles.

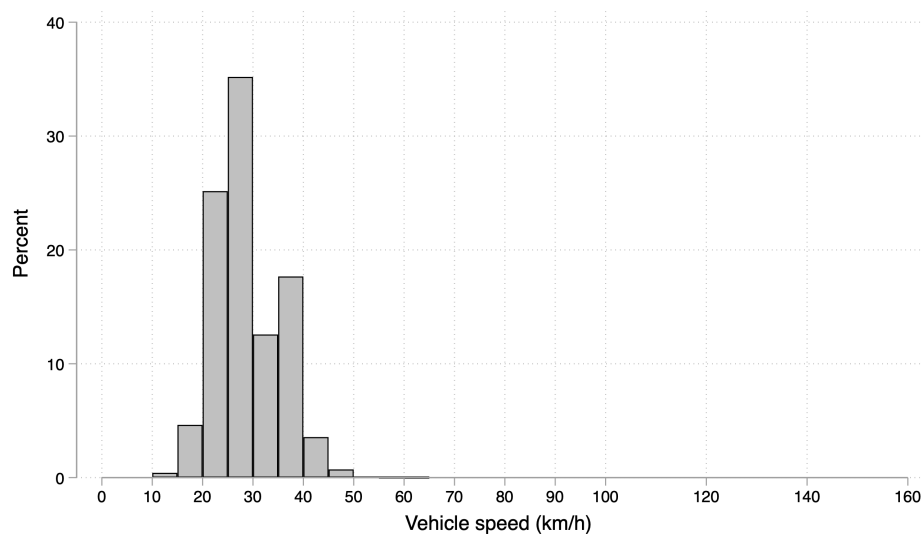
### 1.1. Total number of observed vehicles

67,721

### 1.2. Prevalence of exceeding the posted speed limit and summary measures of speed among all vehicles

N	Prevalence (%)	Mean (km/h)	Std. dev. (km/h)	Median (km/h)	85th pctl (km/h)
67,721	1	28	6	27	37

### 1.3. Histogram of speed among all vehicles



#### 1.4. Prevalence of exceeding the posted speed limit and summary measures of speed by vehicle type

Vehicle type	n	Prevalence (%)	Mean (km/h)	Std. dev. (km/h)	Median (km/h)	85th pctl (km/h)
Sedans/Saloons	20,062	0	29	7	27	37
Pickup/Light trucks	2,572	1	27	6	26	36
Buses	3,675	2	25	4	25	28
Minibuses/Minivans	2,184	7	30	6	29	38
SUVs	2,530	0	29	6	27	37
Three-wheelers	19,829	1	27	5	26	34
Motorcycles	16,869	0	30	7	28	38

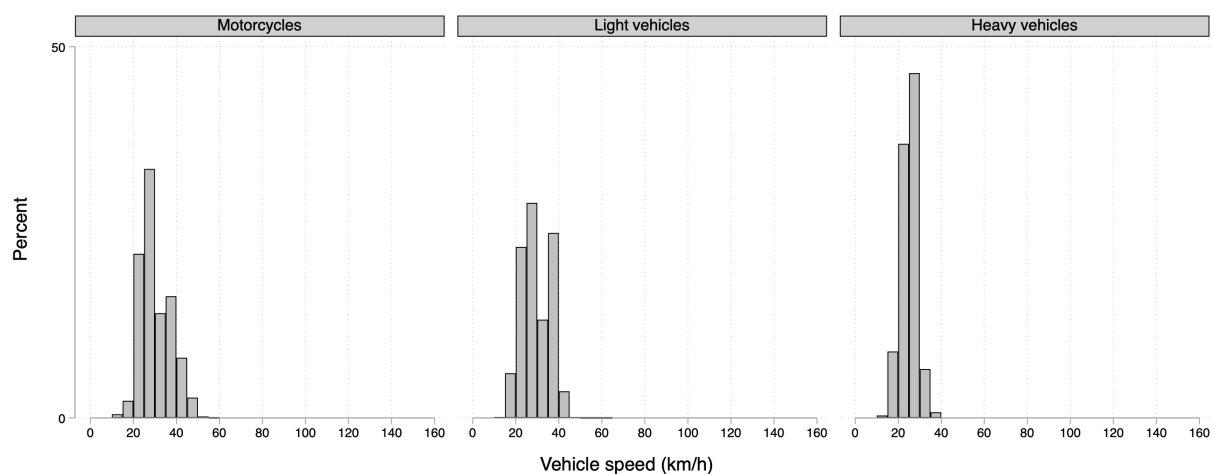
#### 1.5. Prevalence of exceeding the posted speed limit and summary measures of speed by vehicle type group

Vehicle type group	n	Prevalence (%)	Mean (km/h)	Std. dev. (km/h)	Median (km/h)	85th pctl (km/h)
Motorcycles	16,869	0	30	7	28	38
Light vehicles*	27,348	1	29	7	27	37
Heavy vehicles†	3,675	2	25	4	25	28

\* Light vehicles include sedans/saloons/SUVs/4WDs, minibuses/minivans, and pickup/light trucks.

† Heavy vehicles include buses and trucks/large trucks.

#### 1.6. Histogram of speed by vehicle type group



Graphs by Vehicle type (3 categories)

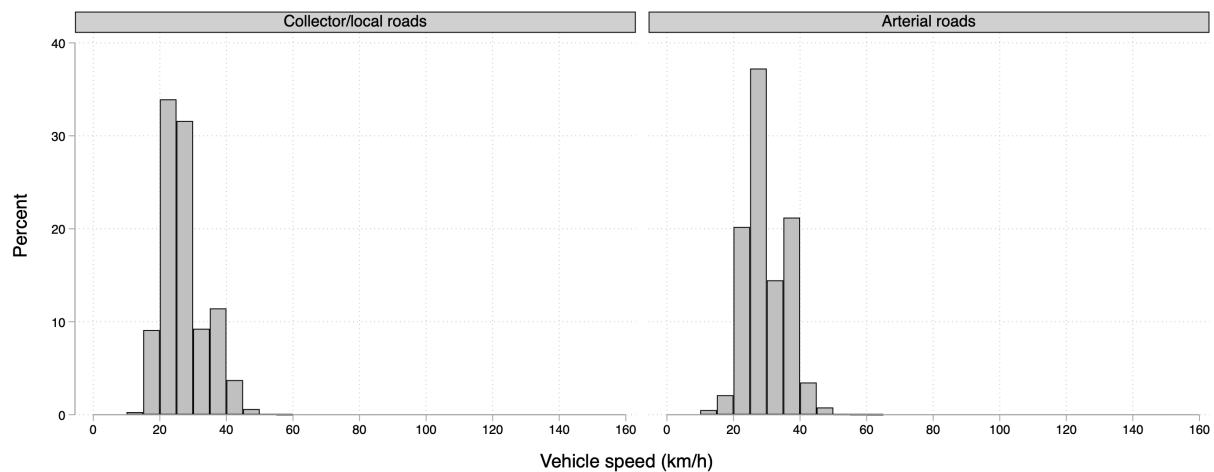
### 1.7. Prevalence of exceeding the posted speed limit and summary measures of speed by road type

Road type	n	Prevalence (%)	Mean (km/h)	Std. dev. (km/h)	Median (km/h)	85th pctl (km/h)
Collector/local	24,513	0	27	6	25	35
Arterial	43,208	1	29	6	28	37

### 1.8. Prevalence of traveling faster than 30 km/h in collector/local roads and 50 km/h in arterial roads

	n	Prevalence (%)
> 30 km/h in collector/local	24,513	24
> 50 km/h in arterial	43,208	0

### 1.9. Histogram of speed by road type



Graphs by Road type

### 1.10. Prevalence of exceeding the posted speed limit by extent of excess and summary measures of speed by speed limit

Speed limit (km/h)	n	Prev. of speed > limit (%)	Prev. of speed > limit + 10 km/h (%)	Prev. of speed > limit + 20 km/h (%)	Mean (km/h)	Std. dev. (km/h)	Median (km/h)	85th pctl (km/h)
30	8,169	4	0	0	23	4	23	27
40	32,346	0	0	0	27	5	26	33
50	16,111	0	0	0	30	6	29	37
60	11,095	0	0	0	35	6	36	41

### 1.11. Prevalence of exceeding the posted speed limit by extent of excess and vehicle type

Speed limit (km/h)	n	Prev. of speed > limit (%)	Prev. of speed > limit + 10 km/h (%)	Prev. of speed > limit + 20 km/h (%)
Sedans/Saloons	20,062	0	0	0
Pickup/Light trucks	2,572	1	0	0
Buses	3,675	2	0	0
Minibuses/Minivans	2,184	7	0	0
SUVs	2,530	0	0	0
Three-wheelers	19,829	1	0	0
Motorcycles	16,869	0	0	0

### 1.12. Prevalence of exceeding the posted speed limit and summary measures of speed by vehicle ownership

Vehicle ownership type	n	Prevalence (%)	Mean (km/h)	Std. dev. (km/h)	Median (km/h)	85th pctl (km/h)
Commercial	15,547	2	28	6	27	36
Government	3	0	32	6	35	36
Ride-share	49	0	28	5	26	36
Other	52,122	0	28	7	27	37

### 1.13. Prevalence of exceeding the posted speed limit and summary measures of speed by day of the week

Day of the week	n	Prevalence (%)	Mean (km/h)	Std. dev. (km/h)	Median (km/h)	85th pctl (km/h)
Monday	13,973	0	29	7	27	37
Tuesday	3,678	0	31	6	32	38
Wednesday	11,908	1	28	7	27	36
Thursday	4,463	0	23	4	23	27
Friday	10,255	1	28	6	27	35
Saturday	12,353	1	30	7	28	38
Sunday	11,091	0	28	6	26	36

### 1.14. Prevalence of exceeding the posted speed limit and summary measures of speed by weekday/weekend\*

	n	Prevalence (%)	Mean (km/h)	Std. dev. (km/h)	Median (km/h)	85th pctl (km/h)
Weekday	45,113	0	28	7	26	37
Weekend	22,608	1	29	6	28	37

\* The weekend is Friday and Saturday.

### 1.15. Prevalence of exceeding the posted speed limit and summary measures of speed by observation session start time

Session start time	n	Prevalence (%)	Mean (km/h)	Std. dev. (km/h)	Median (km/h)	85th pctl (km/h)
6:30 a.m. to 9 a.m.	13,260	1	29	6	28	37
9:01 a.m. to 11 a.m.	13,119	0	28	6	27	36
11:01 a.m. to 2 p.m.	13,983	0	28	6	27	36
2:01 p.m. to 4 p.m.	13,834	0	28	6	26	36
4:01 p.m. to 7 p.m.	13,525	0	28	7	26	36



The following analyses on speeding are restricted to vehicles in free flow speed, which are defined as those traveling faster than the speed limit when/where there is no impedance for drivers to speed freely, such as bad weather, a junction, tight bend, speed bump, stop sign, crosswalk, and law enforcement activities nearby.

#### 1.16. Summary measures of speed among vehicles in free flow speed

n	Mean (km/h)	Std. dev. (km/h)	Median (km/h)	85th pctl (km/h)
243	34	4	32	35

#### 1.17. Summary measures of speed among vehicles in free flow speed by vehicle type group

Vehicle type group	n	Mean (km/h)	Std. dev. (km/h)	Median (km/h)	85th pctl (km/h)
Motorcycles	7	49	6	53	56
Light vehicles*	168	34	4	32	36
Heavy vehicle†	68	33	2	32	35

\* Light vehicles include sedans/saloons/SUVs/4WDs, minibuses/minivans, and pickup/light trucks.

† Heavy vehicles include buses and trucks/large trucks.

#### 1.18. Summary measures of speed among vehicles in free flow speed by road type

Road type	n	Mean (km/h)	Std. dev. (km/h)	Median (km/h)	85th pctl (km/h)
Collector/local	65	34	4	33	38
Arterial	178	34	4	32	35

#### 1.19. Summary measures of speed among vehicles in free flow speed by speed limit

Speed limit (km/h)	n	Mean (km/h)	Std. dev. (km/h)	Median (km/h)	85th pctl (km/h)
30	226	33	3	32	35
40	13	42	1	42	43
50	4	54	1	54	56

### 1.20. Summary measures of speed among vehicles in free flow speed by vehicle ownership

Vehicle ownership type	n	Mean (km/h)	Std. dev. (km/h)	Median (km/h)	85th pctl (km/h)
Commercial	162	33	3	32	35
Other	81	35	6	33	38

### 1.21. Summary measures of speed among vehicles in free flow speed by day of the week

Day of the week	n	Mean (km/h)	Std. dev. (km/h)	Median (km/h)	85th pctl (km/h)
Monday	20	34	6	32	36
Tuesday	3	35	5	33	35
Wednesday	40	34	3	33	41
Thursday	14	32	2	32	36
Friday	61	33	3	32	35
Saturday	80	34	4	32	35
Sunday	25	35	6	32	36

### 1.22. Summary measures of speed among vehicles in free flow speed by observation session start time

Session start time	n	Mean (km/h)	Std. dev. (km/h)	Median (km/h)	85th pctl (km/h)
6:30 a.m. to 9 a.m.	97	34	4	33	36
9:01 a.m. to 11 a.m.	35	34	6	32	35
11:01 a.m. to 2 p.m.	44	34	6	32	35
2:01 p.m. to 4 p.m.	42	32	2	32	35
4:01 p.m. to 7 p.m.	25	35	3	34	38

### 1.23 Speed summary per location

location	Latitude	Longitude	n	Speeding	Mean (km/h)	Std. dev. (km/h)	85 <sup>th</sup> pctl (km/h)
247 GM bari, Satarkul road, Uttar Badda	23.7889826	90.4346363	1687	0	22	3	25
Asad Avenue near St. Joseph school	23.7602125	90.3702937	4679	1	37	4	41
Basila Road in front of Walton showroom	23.7565056	90.3581215	4732	1	27	4	32
Bijoy Shoroni in front of Novo Theatre	23.7645714	90.3871178	6257	0	38	3	41
Gajnabi Road	23.7680375	90.3685664	2967	0	23	4	26
Gulshan link road in front of Rangs Babylonia	23.7707516	90.405282	4541	2	28	5	34
Humayun Road	23.7670102	90.3636143	1895	0	20	2	23
In front of NICVD	23.770858	90.3682708	6142	0	35	4	38
In front of Nabisco Biscuit Factory	23.7679183	90.4008967	7127	0	28	4	32
In front of Shyamoli Club	23.7741632	90.3628526	4620	0	27	4	30
Madani Avenue	23.7981243	90.4254867	3933	0	23	3	26
Main road near Satarkul road	23.7890838	90.4251248	6244	1	26	3	28
Main road opposite side of Badda High School	23.7800623	90.4256441	2966	0	23	3	26
Main road opposite side of Ibne Sina Hospital	23.7833633	90.4257558	3459	0	22	4	26
Shahjadpur main road (opposite of lavender)	23.7943659	90.4241873	6472	1	28	4	32